URS OPERATING SERVICES

1099 18TH STREET
SUITE 710
DENVER, COLORADO 80202-1908
TEL: (303) 296-3523
FAX: (303) 291-8296

April 19, 2000

Ms. Joyce Ackerman
On-Scene Coordinator
U.S Environmental Protection Agency, Region VIII
999 18th Street, Suite 500, Mail Code: 8EPR-ER
Denver, Colorado 80202

SUBJECT: START, EPA Region VIII, Contract No. 68-W5-0031, TDD 0004-0002
Preliminary Results - Rocky Flats Grass Burn, Arvada, Jefferson County, Colorado

Dear Joyce:

Please find attached a copy of the preliminary laboratory results for gross alpha and gross beta particles on samples collected during the Rocky Flats controlled burn. Field activities were completed on April 6, 2000.

The Superfund Technical Assessment and Response Team (START) used two high volume (HIVOL) samplers to collect particulates upwind and downwind of the controlled burn conducted at the Rocky Flats Environmental Technology Site. HIVOL sampler RF-1 was placed downwind of the controlled burn and HIVOL sampler RF-2 was placed upwind of the controlled burn. The HIVOL samplers were calibrated before and after operation. Calibration results were satisfactory and will be reported in the Sampling Activities Report (SAR) to be submitted after isotopic laboratory results are available. The SAR will also describe the field activities in greater detail. The calibration data along with temperature and barometric pressure data from the meteorological station located at the Rocky Flats facility were used to calculate flow rates at field conditions for both samplers. The glass fiber filters from the two HIVOLs (RF-1 and RF-2) and a blank filter (RF-3) were analyzed by Paragon Analytics Laboratory results for gross alpha particles, gross beta particles, isotopic americium, isotopic plutonium, and isotopic uranium. The isotopic results were not available at the time of this letter. The gross alpha and gross beta particle results are reported in the following table. Calculations used these results along with the flow rate and run time to ensure that concentrations between the upwind and downwind filters did not exceed 5.13pCi/m^3 and would not exceed this value during an 8-hour burn.

It should be noted that the results attached are preliminary and have not undergone laboratory quality assurance review or third party validation.

Fax to
Patrick Haines
303 966-3578

Tim Rehder

75-00402.00
F:\START\RockyFlatsBurn\GrossResults.wpd:bas

Filter ID/ Location	Laboratory Results		Run Time (minutes)	Flow Rate (m^3/min)	Gross Alpha (pCi/m^3)	Gross Beta (pCi/m^3)
	Gross Alpha (pCi/filter)	Gross Beta (pCi/filter)				
RF-1 Downwind	20.2± 2.9	9.8± 1.4	66	1.241	0.25±0.04	0.12±0.09
RF-2 Upwind	0.84± 0.86	4.2± 1.2	60	1.170	0.01±0.01	0.06±0.02
RF-3 Blank	1.1±1.3	1.5±1.3	NA	NA	NA	NA

If you have any questions, please call me at 303-291-8229.

Very truly yours,

URS OPERATING SERVICES, INC.

Rebecca Laramie
Environmental Engineer

attachments

cc: Tim Rehder/EPA
T. F. Staible/UOS without attachments
File/UOS

75-00402.00
F:\START\RockyFlatsBurn\GrossResults.wpd:bas

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ALPHA/BETA ANALYSIS RESULTS SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc. Date Collected: 04/06/2000

Client Name: URS Operating Services Date Analyzed : 04/13/2000

Client Project ID: Rocky Flats Grass Burn Sample Matrix : Filter

Lab Sample ID Series: 00-04-058 Count Duration: 1000 Min.

Analyzed By : MCG

Client Sample ID	Lab Sample ID	Gross Alpha (pCi/filt)	Gross Beta (pCi/filt)
RF-1	04-058-01	20.2 ± 2.9	9.8 ± 1.4
RF-2	04-058-02	0.84 ± 0.86	4.2 ± 1.2
RF-3	04-058-03	1.1 ± 1.3	1.5 ± 1.3

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ). See PAI SOP743R1 for TPU determinations.

Reported Activities are the calculated net activities, not truncated or censored by an *a priori* detection limit estimate. Sample results should be compared to the decision level calculated from the appropriate blank.

These samples were prepared using PAI SOP702R12 and analyzed using PAI SOP724R5.

Remarks:

Units are pCi/filter.

PRELIMINARY RESULTS

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ALPHA/BETA ANALYSIS MDA SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc. Date Collected: 04/06/2000

Client Name: URS Operating Services Date Analyzed : 04/13/2000

Client Project ID: Rocky Flats Grass Burn Sample Matrix : Filter

Lab Sample ID Series: 00-04-058 Count Duration: 1000 Min.

Analyzed By : MCG

Client Sample ID	Lab Sample ID	Gross Alpha MDA (pCi/filt)	Gross Beta MDA (pCi/filt)
RF-1	04-058-01	0.69	0.78
RF-2	04-058-02	1.4	1.6
RF-3	04-058-03	2.2	2.2

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ). See PAI SOP743R1 for TPU determinations.

These samples were prepared using PAI SOP702R12 and analyzed using PAI SOP724R5.

Remarks:

Units are pCi/filter.

PRELIMINARY RESULTS

ALPHA/BETA ANALYSIS RESULTS SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc. Date Collected: 04/11/2000

Client Name: URS Operating Services Date Analyzed : 04/13/2000

Client Project ID: Rocky Flats Grass Burn Sample Matrix : Filter

Lab Sample ID Series: 00-04-058 Count Duration: 1000 Min.

Analyzed By : MCG

Client Sample ID	Lab Sample ID	Gross Alpha (pCi/filt)	Gross Beta (pCi/filt)
Blank Decision Level	04-058-B1 04-058-B1	0.00 ± 0.10 0.08	0.54 ± 0.20 0.14

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ). See PAI SOP743R1 for TPU determinations.

Reported Activities are the calculated net activities, not truncated or censored by an *a priori* detection limit estimate. Sample results should be compared to the decision level calculated from the appropriate blank.

These samples were prepared using PAI SOP702R12 and analyzed using PAI SOP724R5.

Remarks:

Units are pCi/filter.

PRELIMINARY RESULTS

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ALPHA/BETA ANALYSIS MDA SUMMARY

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc. Date Collected: 04/11/2000

Client Name: URS Operating Services Date Analyzed : 04/13/2000

Client Project ID: Rocky Flats Grass Burn Sample Matrix : Filter

Lab Sample ID Series: 00-04-058 Count Duration: 1000 Min.

Analyzed By : MCG

Client Sample ID	Lab Sample ID	Gross Alpha MDA (pCi/filt)	Gross Beta MDA (pCi/filt)
Blank	04-058-B1	0.17	0.30

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ).
See PAI SOP743R1 for TPU determinations.

These samples were prepared using PAI SOP702R12
and analyzed using PAI SOP724R5.

Remarks:

Units are pCi/filter.

PRELIMINARY RESULTS

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GROSS ALPHA/BETA BLANK SPIKE RESULTS

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc. Date Collected: 04/11/2000

Client Name: URS Operating Services Date Analyzed : 04/12/2000

Client Project ID : Rocky Flats Grass Burn Sample Matrix : Filter

Lab Workorder Number : 00-04-058 Units : pCi/f

Alpha Recovery Data

Lab Sample ID	Alpha Spike Added	Alpha Reported	Percent Recovery	Flag
00-04-058-S1	50.3	42.6	84.7	Pass

Beta Recovery Data

Lab Sample ID	Beta Spike Added	Beta Reported	Percent Recovery	Flag
00-04-058-S1	49.9	51.8	103.7	Pass

PAI sets control limits for gross alpha/beta measurements based on EPA/EMSL Laboratory Intercomparison Control Limits.

Acceptance Range for Percent Recovery of blank spike samples is known ± 30%.

Remarks:

Units are pCi/filter.

PRELIMINARY RESULTS

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GROSS ALPHA/BETA BLANK SPIKE RESULTS

Method 900.0/9310 (Modified)

Lab Name: Paragon Analytics, Inc. Date Collected: 04/11/2000

Client Name: URS Operating Services Date Analyzed : 04/12/2000

Client Project ID : Rocky Flats Grass Burn Sample Matrix : Filter

Lab Workorder Number : 00-04-058 Units : pCi/f

Alpha Recovery Data

Lab Sample ID	Alpha Spike Added	Alpha Reported	Percent Recovery	Flag
00-04-058-S2	50.3	43.4	86.4	Pass

Beta Recovery Data

Lab Sample ID	Beta Spike Added	Beta Reported	Percent Recovery	Flag
00-04-058-S2	49.9	50.0	100.1	Pass

PAI sets control limits for gross alpha/beta measurements based on EPA/EMSL Laboratory Intercomparison Control Limits.

Acceptance Range for Percent Recovery of blank spike samples is known ± 30%.

Remarks:

Units are pCi/filter.

PRELIMINARY RESULTS

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DRAFT FIELD DATA SHEET

Prescribed Burn Air Monitoring Plan

Filter Type: (8 x10 Glass 47) mm Teflon / 47mm Quartz

Filter Number: AQM-TB-H3

Date Exposed: 4/6/00

Time On: 1004 Time Off: 1102

Description of Exposed Filter: LIGHT, GREY COATING

* NOTE - FILTER TORN DURING RECOVERY IN WIND

Gravimetric Analysis:

Pre-sampling	Date/Time	**Post-sampling**	Date/Time
Trial 1 2813.4 mg	3/27 12:15	Trial 1 2817.7 mg	4/7 11:48
Temp/RH 22°C / 12% RH		Temp/RH 22°C / 19% RH	
Trial 2 2813.5 mg	3/28 07:30	Trial 2 2817.6 mg	4/7 12:27
Temp/RH 21.5°C / 10% RH		Temp/RH 22°C / 89% RH	
Trial 3 2813.4 mg	3/28 1530	Trial 3	
Temp/RH 23°C / 10% RH		Temp/RH	
Final 2813.4 mg		Final 2817.65 mg	

sample conditioned by: DESSICATION

△ Weight: +4.25 mg

Sample Time: 58 min

Qa (see reverse): 0.991 m³/min

Concentration: 0.07 mg/m³ Conc = △ weight/volume

Volume: 57.45 m³ Qa x Time (min) = Volume

RIN: 00R0975-003.001

SampleTaken by: PM Haines

Gravimetric Analysis by: PM Haines

Free-release Evaluation No.:

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